

Notice of Allowability

Application No.

09/695,028

Examiner

Anita K Alanko

Applicant(s)

BENZ, JASON MICHAEL

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/27/03 after final amdt.
 2. ☒ The allowed claim(s) is/are 1-39.
 3. ☒ The drawings filed on 30 June 2003 are accepted by the Examiner.
 4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
 6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☒ including changes required by the proposed drawing correction filed 30 June 2003, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. _____. |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No. _____ | 7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Peter Balnave on November 14, 2003.

The application has been amended as follows:

Claim 1 (amended). A method of etching a substrate, comprising:

providing a substrate comprising a reflective material deposited on said substrate and a metal oxide deposited on said reflective material;

etching said substrate to an etch target and etching said metal oxide;

measuring a reflectance signal from ~~[[a]]~~ said reflective material deposited on the substrate as the substrate is being etched;

correlating a substrate etch rate to the reflectance signal from the reflective material; and

using an etch relation between the substrate and the reflective material to determine ~~[[an]]~~ the etch target,

wherein the reflective material is isolated from ~~[[an]]~~ the etching process,

wherein the etch relation is determined by a ratio of etch rates between ~~[[a]]~~ the metal oxide and the substrate, and

wherein the etch target is determined before said metal oxide is completely removed.

12. (amended) A method of etching a material, comprising:

providing a substrate comprising a correlation material deposited on second material and a metal oxide deposited on said correlation material;

etching said second material to an etch target and etching said metal oxide;

measuring a reflectance signal from ~~[[a]]~~ said correlation material that is removed from the path of ~~[[a]]~~ the second material that is to be etched as the second material is etched;

correlating the second material etch rate to the reflectance signal from the correlation material; and

using an etch ratio between the correlation material and the second material to determine ~~[[an]]~~ the etch target,

wherein the correlation material is isolated from ~~[[an]]~~ the etching process,

wherein the etch ratio is determined by a ratio of etch rates between ~~[[a]]~~ the metal oxide and the second material, and

wherein the etch target is determined before the metal oxide is completely removed.

23. (amended) A method of etching a semiconductor substrate, comprising:

providing a semiconductor substrate comprising an opaque material deposited on said semiconductor substrate and a metal oxide deposited on said opaque material;

etching said semiconductor substrate to an etch target and etching said metal oxide;

measuring a reflectance signal from ~~[[an]]~~ said opaque material deposited on the semiconductor substrate as the semiconductor substrate is being etched;

correlating the semiconductor substrate etch rate to the reflectance signal from the opaque material; and

using an etch relation between the semiconductor substrate and the opaque material to determine ~~[[an]]~~ the etch target,

wherein the opaque material is isolated from ~~[[an]]~~ the etching process,

wherein the etch relation is determined by a ratio of etch rates between ~~[[a]]~~ the metal oxide and the semiconductor substrate, and

wherein the etch target is determined before the metal oxide is completely removed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K Alanko whose telephone number is 703-305-7708. The examiner can normally be reached on Monday, Tuesday and Friday, 8:00 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 703-305-2667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Anita K. Alanko

Anita K Alanko
Primary Examiner
Art Unit 1765